

## R E M A R K S

In the Office Action, the Examiner rejected the claims under 35 USC §102 and 35 USC §103. The rejections are fully traversed below. The claims have been amended to correct typographical errors and to further clarify the subject matter regarded as the invention in order to expedite allowance of the pending claims. Claims 12, 18, 40, 52, and 53 have been cancelled. Claims 1-11, 13-17, 19-38, 41-51, and 54-82 remain pending.

Reconsideration of the application is respectfully requested based on the following remarks.

### **REJECTION OF CLAIMS UNDER 35 USC §102(E)**

In the Office Action, the Examiner has rejected claims 1-4, 13-16, 44-46, 52, 54-57, 67-69 and 77-79 under 35 USC §102(e) as being anticipated by Khalil et al, WO 01/26322, ('Khalil' hereinafter). This rejection is fully traversed below.

Claims 1 and 67-69, as amended, recite, in part:

receiving a Mobile IP registration request packet from the Mobile Node indicating that a key to be shared by the Mobile Node and an agent with which the Mobile Node is registering is requested for purposes of registering the Mobile Node with the agent, wherein the agent with which the Mobile Node is registering is a Home Agent that is dynamically assigned to the Mobile Node;

obtaining a key to be shared by the Mobile Node and the agent with which the Mobile Node is registering in response to receiving the Mobile IP registration request packet;

storing the key to be shared by the Mobile Node and the agent with which the Mobile Node is registering; and

sending a Mobile IP registration reply packet to the mobile node including the key to be shared by the Mobile Node and the agent with which the Mobile Node is registering, thereby enabling the Mobile Node to register with the agent, wherein the Mobile IP registration reply packet indicates that the Mobile node needs to register with the agent using the key to be shared by the Mobile Node and the agent with which the Mobile Node is registering.

Khalil discloses that “as the mobile node 102 roams over foreign domains, the mobile node can always be authenticated and registered by the home agent 108.” See page 11, lines 17-19. In addition, “messages communicated between the mobile node 102 and the home agent 108 are encrypted using an encryption key.” See page 11, lines 23-25. Upon receiving an encrypted registration request, the home agent authenticates the mobile node by decrypting the encrypted registration request using encryption key Key 0. After registration of the mobile node with the home agent, the home agent requests the key distribution center to generate encryption keys (e.g., key1, key2, etc.) for distribution to the mobile node and foreign agent. The home agent then distributes the encryption keys to the mobile node and foreign agent. See page 13, lines 11-19. Thus, the encryption keys are requested from a key distribution center after registration is completed. In other words, the key is not obtained for purposes of registering the mobile node with the home agent.

It is important to note that the key that is used by the mobile node to register with the home agent in Khalil, KEY 0, is predefined. See page 11, lines 13-15 and page 13, lines 11-14. In one embodiment, the key distribution center generates an encryption KEY 0 and distributes the key to the mobile node and the home agent during an initialization process. The key is not obtained in response to a registration request.

In contrast, the invention of claims 1 and 67-69 enables a key to be shared between the Mobile Node and the agent with which the Mobile Node is registering to be obtained in response to a registration request for purposes of registering the Mobile Node with the agent, enabling the Mobile Node to register with the agent. Thus, the key that is obtained in

response to the registration request is to be used to enable the Mobile Nod to register with the agent.

Khalil neither discloses nor suggests obtaining a key to be shared by the Mobile Node and the agent with which the Mobile Node is registering, where the key is to be used for registering the Mobile Node with the agent. In addition, Khalil neither discloses nor suggests sending a Mobile IP registration reply packet to the mobile node including the key to be shared by the Mobile Node and the agent with which the Mobile Node is registering, enabling the Mobile Node to register with the agent. It is also important to note that Khalil fails to disclose or suggest that the Mobile IP registration request packet indicates that a key to be shared by the Mobile Node and an agent with which the Mobile Node is registering is requested for purposes of registering the Mobile Node with the agent.

It is also important to note that Khalil fails to disclose or suggest that the agent with which the Mobile Node is registering is a Home Agent that is dynamically assigned. Moreover, Khalil fails to disclose or suggest that the Mobile IP registration reply packet indicates that the Mobile node needs to register with the agent using the key to be shared by the Mobile Node and the agent with which the Mobile Node is registering. Accordingly, Applicant respectfully submits that claims 1 and 67-69 are patentable over Khalil.

Claims 44 and 77-79 recite, in part:

receiving a Mobile IP registration request packet from the Mobile Node indicating that a Home Agent with which the Mobile Node is to register is to be assigned to the Mobile Node;

obtaining a Home Agent assignment, the Home Agent assignment identifying the Home Agent with which the Mobile Node is to register; and

sending a Mobile IP registration reply packet to the Mobile Node identifying the Home Agent with which the Mobile Node is to register and including a key to be shared by the Mobile node and the Home Agent with which the Mobile Node is to register;

wherein the Mobile IP registration reply packet further indicates that the Mobile node needs to register with the Home Agent using the key to be shared by the Mobile Node and the Home Agent with which the Mobile Node is registering.

Khalil says nothing about receiving a Mobile IP registration request packet from the Mobile Node indicating that a Home Agent with which the Mobile Node is to register is to be assigned to the Mobile Node. While the Examiner cites page 19, lines 3-11, this portion of Khalil merely indicates that private information is contained in the registration request. There is no indication that the registration request indicates that a Home Agent is to be assigned.

Similarly, page 19, lines 12-23 and page 20, lines 3-16 are silent as to obtaining a Home Agent assignment. Rather, this cited portion of Khalil merely indicates that a home AAA server relays the registration request to a home agent.

The Examiner further cites page 19, lines 24-28 and page 20, lines 3-16. However, these cited portions of Khalil fail to disclose or suggest sending a Mobile IP registration reply packet to the Mobile Node identifying the Home Agent with which the Mobile Node is to register. In fact, page 19, lines 24-28 merely refer to the distribution of encryption keys. There is no mention of sending a Mobile IP registration reply packet to the Mobile Node identifying the Home Agent with which the Mobile Node is to register.

Khalil also fails to disclose or suggest that the Mobile IP registration reply packet includes a key to be shared by the Mobile node and the Home Agent with which the Mobile Node is to register. Moreover, Khalil fails to disclose or suggest that the Mobile IP registration reply packet further indicates that the Mobile node needs to register with the Home Agent using the key to be shared by the Mobile Node and the Home Agent with which the Mobile Node is registering. Accordingly, Applicant respectfully submits that claims 44 and 77-79 are patentable over Khalil

The dependent claims depend from one of the independent claims and are therefore patentable for at least the same reasons. However, the dependent claims recite additional limitations that further distinguish them from Khalil. The additional limitations recited in the

independent claims or the dependent claims are not further discussed, as the above discussed limitations are clearly sufficient to distinguish the claimed invention from the cited reference. Thus, it is respectfully requested that the Examiner withdraw the rejection of the claims under 35 USC §102.

### **REJECTION OF CLAIMS UNDER 35 USC §103**

The Examiner has also rejected claims 37, 38, 40, 41, and 73-75 under 35 USC §103(a) as being unpatentable over Chowdhury et al, U.S. Patent Application No. 2002/0114323, ('Chowdhury' hereinafter) in view of Khalil. This rejection is fully traversed below.

Claim 37 recites, in part:

receiving a Mobile IP registration reply from the Mobility Agent, the Mobile IP registration reply identifying a Home Agent that has been dynamically assigned to the Mobile Node;

wherein the Mobile IP registration reply further identifies a key to be shared by the Mobile Node and the Home Agent that has been assigned to the Mobile Node, thereby enabling the Mobile Node to subsequently register directly with the Home Agent that has been assigned to the Mobile Node using the key to be shared by the Mobile Node and the Home Agent.

Applicant respectfully submits that while Chowdhury relates to the dynamic assignment of a Home Agent, Chowdhury fails to disclose or suggest obtaining a key to be shared between the Mobile Node and the assigned Home Agent, enabling the Mobile Node to subsequently register directly with the Home Agent that has been dynamically assigned to the

Mobile Node using the key to be shared by the Mobile Node and the Home Agent. Applicant respectfully submits that Khalil fails to cure the deficiencies of Chowdhury, in view of the arguments set forth above.

Dependent claim 38 and claims 73-75 further recite the obtaining of the key from the registration reply, composing of a second registration request using the key, and sending the second registration request to the Home Agent that has been dynamically assigned. Neither of the cited references, separately or in combination, discloses or suggests requiring a Mobile Node to obtain the key to be shared by the Mobile Node and the Home Agent that has been assigned to the Mobile Node from the Mobile IP registration reply, or that the Mobile Node must register directly with the dynamically assigned Home Agent using the key.

The Examiner cites page 13, lines 20-30 of Khalil, asserting that the key to be shared by the mobile node and the home agent that has been assigned to the mobile node is obtained from the Mobile IP registration reply. However, this portion of Khalil relates to encryption keys to be used to encrypt communications after registration has been completed. See page 13, lines 11-19. This is further emphasized at page 11, lines 23-25 of Khalil, which indicate that messages communicated between the mobile node and the home agent are encrypted using an encryption key key 1. However, it is clear that these “messages” refer to data, not subsequent registration request messages. There is no indication in Khalil that these “messages” are registration requests. Moreover, the encryption key, key 0, that is used to authenticate the registration request has already been established during initialization. See page 17, lines 22-31. As such, Applicant respectfully asserts that the combination of the cited references would fail to achieve the desired result. Accordingly, Applicant respectfully submits that claims 37, 38, 40, 41, and 73-75 are patentable over Chowdury in view of Khalil.

The Examiner has also rejected claims 5, 12, 18-27, 32-35, 36, 47, 48, 53, 59-63 and 70-72 under 35 USC §103(a) as being unpatentable over Khalil in view of Chowdhury. This rejection is fully traversed below.

Applicant respectfully submits that Chowdury fails to cure the deficiencies of Khalil, as set forth above. The Examiner asserts that Chowdury is directed to a method for dynamically assigning a home agent that teaches that the Mobile IP registration request packet indicates that the mobile node needs to re-register with the agent with the key to be shared by the mobile node and the agent with which the mobile node is registering, citing paragraphs [0034-0035]. However, it is important to note that these portions of Chowdury require a statically configured “shared secret” value. In other words, the “shared secret” value is not provided in a registration reply. As a result, the combination of the cited references would fail to achieve the desired result. Moreover, Chowdury teaches away from transmitting a key that is to be shared between the mobile node and the dynamically assigned home agent for purposes of registering the mobile node with the assigned home agent. Accordingly, Applicant respectfully submits that claims 5, 12, 18-27, 32-35, 36, 47, 48, 53, 59-63 and 70-72 are patentable over the Khalil in view of Chowdhury.

The Examiner has rejected claims 42, 64-65, 76 and 80-82 under 35 USC §103 over Khalil in view of Agraharam et al, U.S. Patent No. 6,407,988, (‘Agraharam’ hereinafter). This rejection is fully traversed below.

Applicant respectfully asserts that Agraharam fails to cure the deficiencies of the primary reference as set forth above. For example, with respect to claim 42, although the Examiner cites col. 5, line 20 – col. 6, line 33, Applicant was unable to find any reference in Agraharam that the “pseudo home agent” is located on a foreign network that the mobile node is visiting. It is also important to note that the Mobile Node of Agraharam registers with its home agent, but does not register with the “pseudo home agent.” Rather, the home agent may merely signal the pseudo agent with a request to become a “pseudo home agent” for the mobile node. See col. 5, line 63-col. 6, line 1. As a result, the combination of the cited references would fail to achieve the desired result. Moreover, since it would be unnecessary to register the mobile node with the “pseudo home agent” of Agraharam, Applicant respectfully asserts that Agraharam teaches away from sending a registration request to a home agent located on a foreign network that the mobile node is visiting. Accordingly, Applicant respectfully requests that the Examiner withdraw the rejection of claims 42, 64-65, 76 and 80-82 under Khalil in view of Agraharam.

The Examiner has rejected claims 7-11, 17, 49-51 and 58 under 35 USC §103 as being unpatentable over Khalil in view of Rai et al, U.S. Patent No. 6,421,714, ('Rai' hereinafter). This rejection is fully traversed below.

While Rai discusses agent advertisements, Applicant respectfully submits that Rai fails to cure the deficiencies of the primary reference, as set forth above. Moreover, the combination of the cited references would fail to achieve the desired result. Accordingly, Applicant respectfully submits that the combination of the cited references fails to teach or suggest the invention of claims 7-11, 17, 49-51 and 58.

The Examiner has rejected claims 28-31 under 35 USC §103 as being unpatentable over Khalil in view of Chowdhury and further in view of Rai. This rejection is fully traversed below.

Applicant respectfully asserts that both Chowdhury and Rai fail to cure the deficiencies of the primary reference, as set forth above. Thus, the combination of the cited references would fail to achieve the desired result. Accordingly, Applicant respectfully submits that the combination of the cited references fails to teach or suggest the invention of claims 28-31.

In the Office Action, the Examiner has rejected claim 66 under 35 USC §103 as being unpatentable over Khalil in view of Agrapharam and further in view of Rai. This rejection is fully traversed below.

Applicant respectfully asserts that both Agrapharam and Rai fail to cure the deficiencies of the primary reference, as set forth above. Thus, the combination of the cited references would fail to achieve the desired result. Accordingly, Applicant respectfully submits that the combination of the cited references fails to teach or suggest the invention of claim 66.

In the Office Action, the Examiner has rejected claim 43 under 35 USC §103 as being unpatentable over Khalil in view of Agrapharam and further in view of Chowdhury. This rejection is fully traversed below.

Both Agrapharam and Chowdhury fail to cure the deficiencies of the primary reference, as set forth above. More particularly, although Chowdhury discloses the dynamic assignment of a Home Agent, the combination of the cited references fail to disclose or suggest a AAA server assigning a Home Agent to a Mobile Node, where the Home Agent is located on a foreign network that the Mobile Node is visiting. Thus, the combination of the cited references would fail to achieve the desired result. Accordingly, Applicant respectfully submits that the combination of the cited references fails to teach or suggest the invention of claim 43.

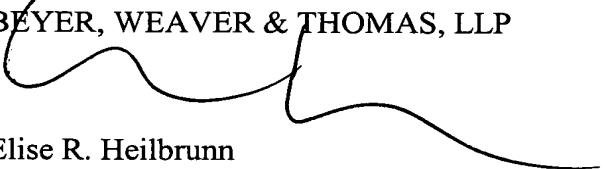
The dependent claims depend from one of the independent claims and are therefore patentable for at least the same reasons. However, the dependent claims recite additional limitations that further distinguish them from the cited references. The additional limitations recited in the independent claims or the dependent claims are not further discussed, as the above discussed limitations are clearly sufficient to distinguish the claimed invention from the cited references. Thus, it is respectfully requested that the Examiner withdraw the rejection of the claims under 35 USC §103.

## **SUMMARY**

If there are any issues remaining which the Examiner believes could be resolved through either a Supplemental Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned attorney at the telephone number listed below.

Applicants hereby petition for an extension of time which may be required to maintain the pendency of this case, and any required fee for such extension or any further fee required in connection with the filing of this Amendment is to be charged to Deposit Account No. 50-0388 (Order No. CISCP243).

Respectfully submitted,  
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